



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 26, 2007

Mr. Pete Larkin
Tensor International Corporation
453 Lake Shore Drive
Sunset Beach, NC 28468

Subject: Approval of Tensor's Mesa Retaining Wall System

Dear Mr. Larkin:

The Geotechnical Engineering Unit (GEU) has fully approved Tensor's Mesa Retaining Wall System for use on North Carolina Department of Transportation (NCDOT) projects in accordance with the "NCDOT Policy for Mechanically Stabilized Earth Retaining Walls". This policy includes restrictions for MSE wall systems with segmental retaining wall (SRW) units and may be obtained from:

<http://www.ncdot.org/doh/preconstruct/highway/geotech/msewalls/>

AASHTO Standard Specifications for Highway Bridges limits the vertical spacing between reinforcement layers to twice the unit width or 31", whichever is less. Tensor's Mesa Retaining Wall System will be allowed a design exception to AASHTO regarding the maximum vertical spacing between reinforcement layers. Reinforcement may be spaced up to 24", i.e., every 3 block layers.

The *Evaluation of The Tensor Mesa Retaining Wall System* by the Highway Innovative Technology Evaluation Center (HITEC) states that "filling of the facing block annulus is not required for structural or connection capacity reasons". Therefore, based on the HITEC report, filling the block core spaces with stone is not required for Tensor's Mesa Retaining Wall System.

The Tensor Mesa Retaining Wall System has been updated since the HITEC report was published in 2000. Tensor currently uses UX****MSE geogrids instead of the geogrids submitted for the HITEC report. Tensor submitted material property data sheets, test results, reduction factors and coefficients for the UX****MSE geogrids. Based on this information, Tensor UX1100MSE or better reinforcement is required for use with Tensor's Mesa Retaining

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Wall System. In addition, Mesa standard and DOT connectors are required and defined as miscellaneous components in accordance with NCDOT's Standard Mechanically Stabilized Earth Retaining Walls Special Provision. This provision may be obtained from:
<http://www.ncdot.org/doh/preconstruct/highway/geotech/provnote/>

If you have any questions, I can be reached at (919) 250-4088.

Sincerely,



Njoroge W. Wainaina
State Geotechnical Engineer

cc: K. J. Kim, Ph.D., P.E., Eastern Regional Geotechnical Manager (w/ submittal)
John Pilipchuk, L.G., P.E., Western Regional Geotechnical Manager (w/ submittal)
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